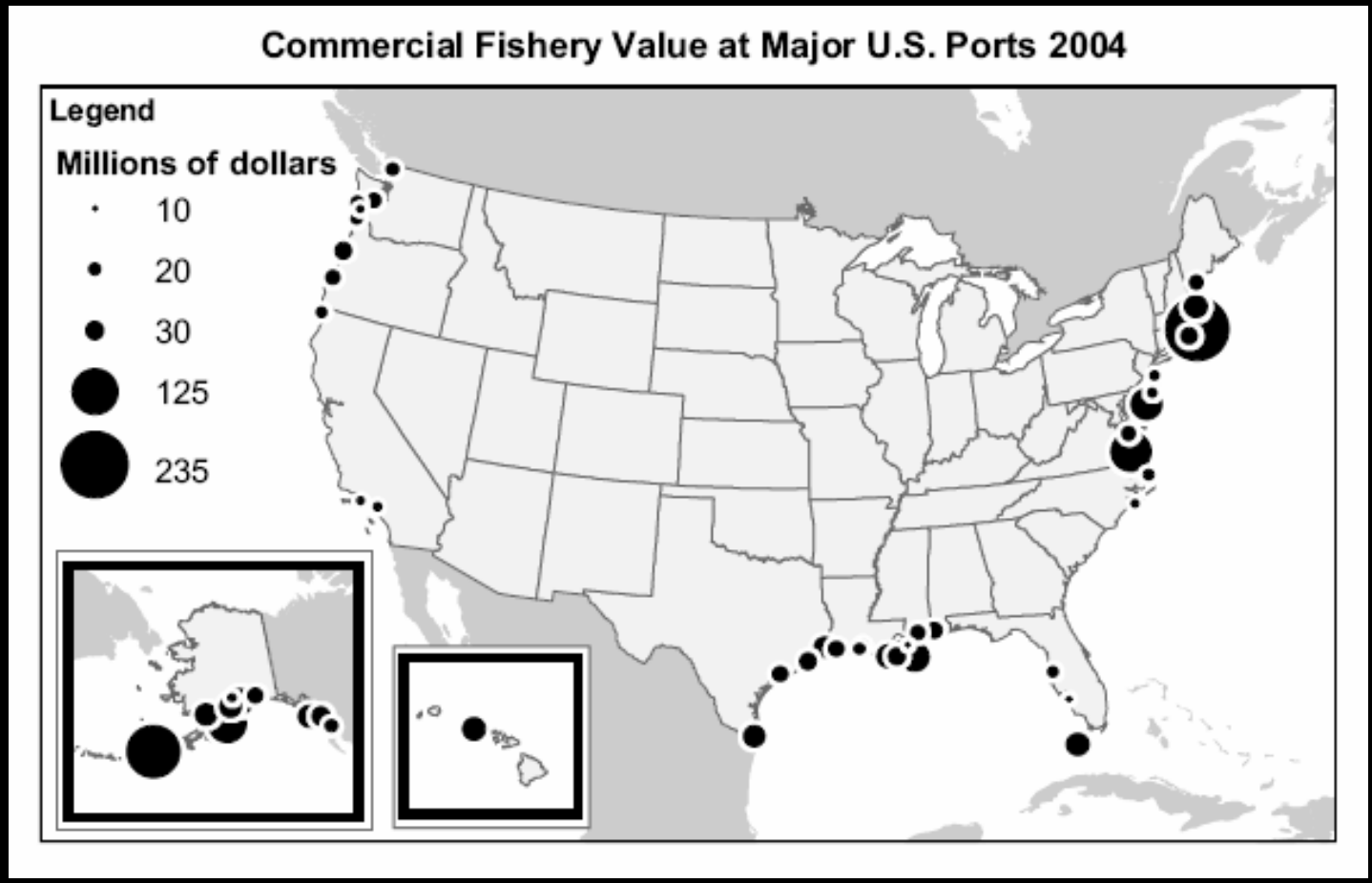
Division of Marine Fisheries

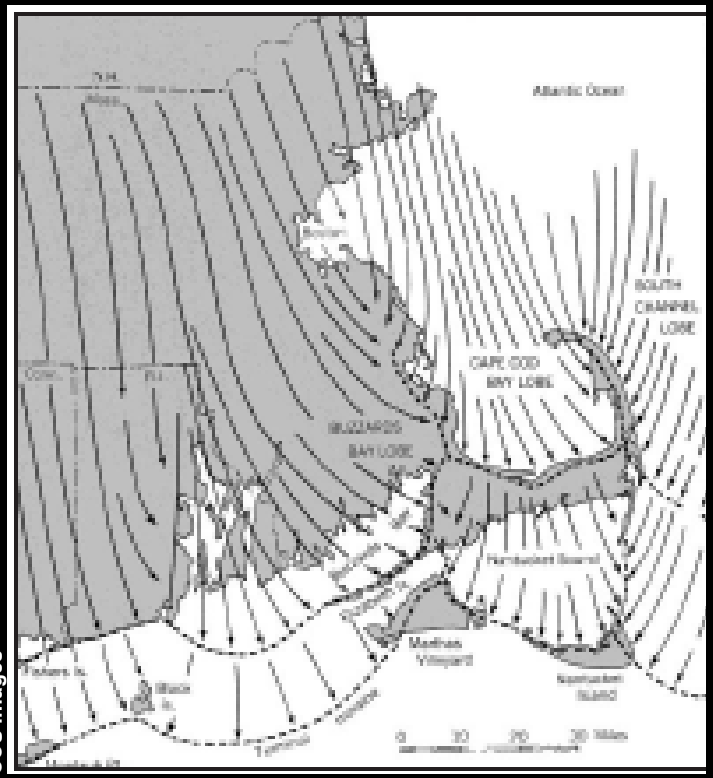
…manage living marine resources to maintain diverse numbers of self-sustaining fish populations in balance with the ecosystem….



"Massachusetts' ports lead the Nation"

CCS Images



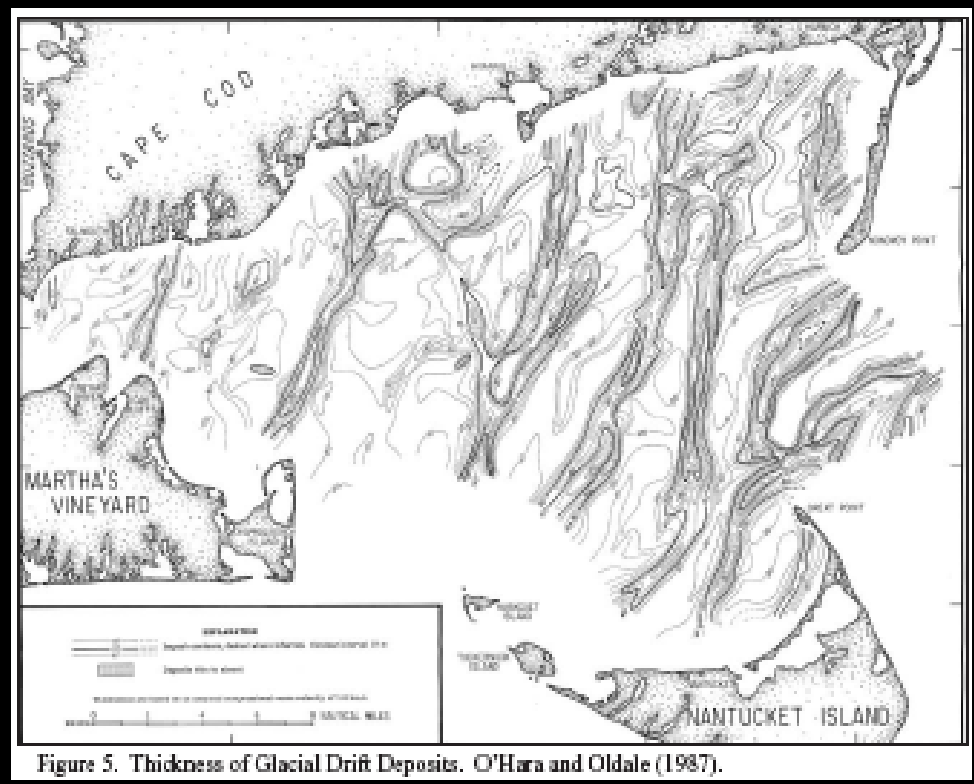
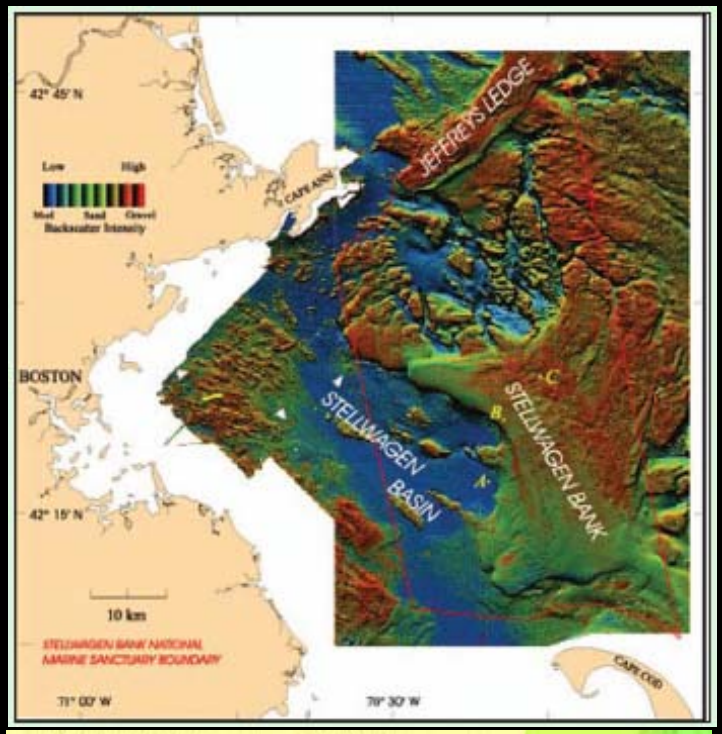


Figure 5. Thickness of Glacial Drift Deposits. O'Hara and Oldale (1987).

Northeast geology differs from southern coastal regions due to numerous glacial events that have deposited large quantities of sediment and carved out a varied topography.



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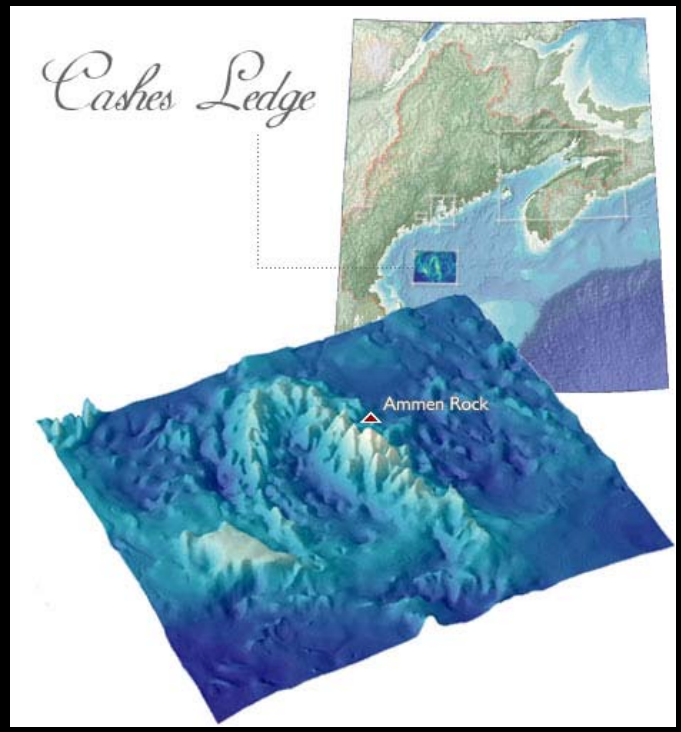
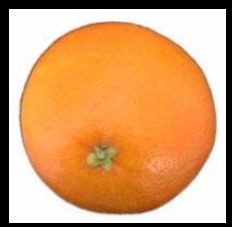
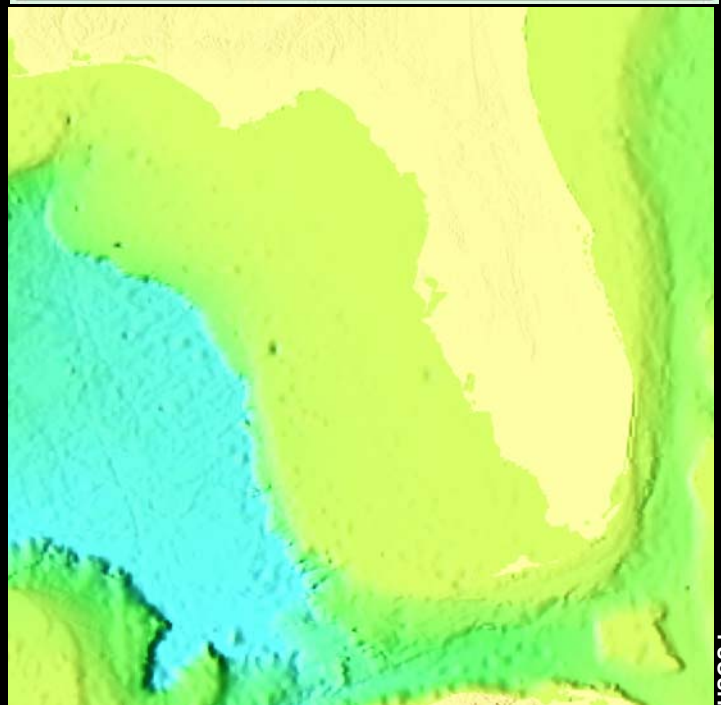


Gulf of Maine Research Institute





USGS Image

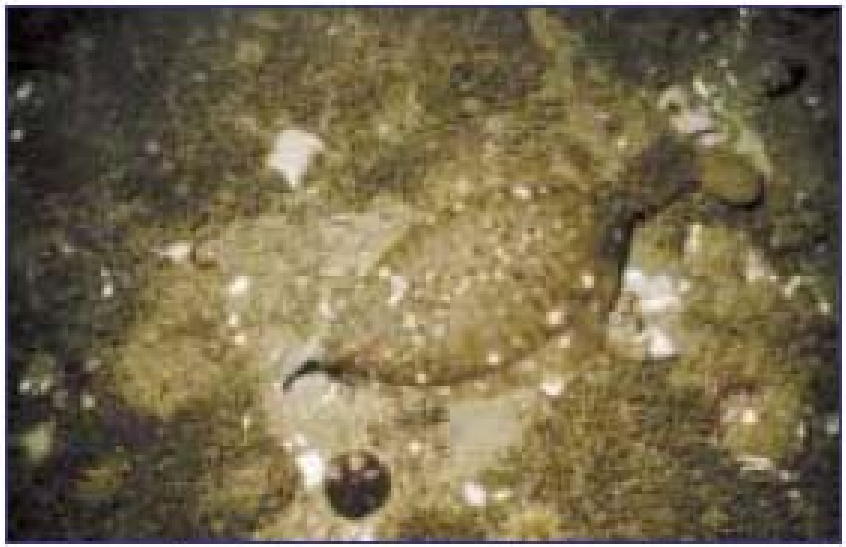
Northeast: High relief

Southern Coast: Low relief

Commonwealth of Massachusetts
Division of Marine Fisheries

Magnuson Fisheries Conservation Act of 1976

"The Magnuson Fisheries Conservation Act of 1976 was designed by Congress to re-Americanize fisheries by controlling or eliminating foreign fishing between 3 and 200 miles and to restore and conserve the fish."



BEFORE: *Seafloor off the coast of Swans Island, Maine, before a single pass of a scallop dredge.*

AFTER: *Seafloor off the coast of Swans Island, Maine, after a single pass of a scallop dredge.*

PETER AUSTER, University of Connecticut (BOTH)

Pew Commission Image

Research on Fishing Impacts to Habitat has been Extensive in Recent Years

• Special Section: Effects of Mobile Fishing Gear on Marine Benthos. By: Watling, Les; Norse, Elliott A.. *Conservation Biology*, Dec98, Vol. 12 Issue 6, p1178-1179

•Disturbance of the Seabed by Mobile Fishing Gear: A Comparison to Forest Clearcutting. By: Watling, Les; Norse, Elliott A.. *Conservation Biology*, Dec98, Vol. 12 Issue 6, p1180-1197

•A Conceptual Model of the Impacts of Fishing Gear on the Integrity of Fish Habitats. By: Auster, Peter J.. *Conservation Biology*, Dec98, Vol. 12 Issue 6, p1198-1203

• Effects of Otter Trawling on a Benthic Community in Monterey Bay National Marine Sanctuary. By: Engel, Jonna; Kvitek, Rikk. *Conservation Biology*, Dec98, Vol. 12 Issue 6, p1204-1214

•Effects of Experimental Otter Trawling on Surficial Sediment Properties of a Sandy-Bottom Ecosystem on the Grand Banks of Newfoundland. By: Schwinghamer, Peter; Gordon, Donald C.; Rowell, Terence W.; Prena, Jens; McKeown, David L.; Sonnichsen, G.; Guigné, J. Y.. *Conservation Biology*, Dec98, Vol. 12 Issue 6, p1215-1222

•Resuspension of Sediment by Bottom Trawling in the Gulf of Maine and Potential Geochemical Consequences. By: Pilskaln, Cynthia H.; Churchill, James H.; Mayer, Lawrence M.. *Conservation Biology*, Dec98, Vol. 12 Issue 6, p1223-1229

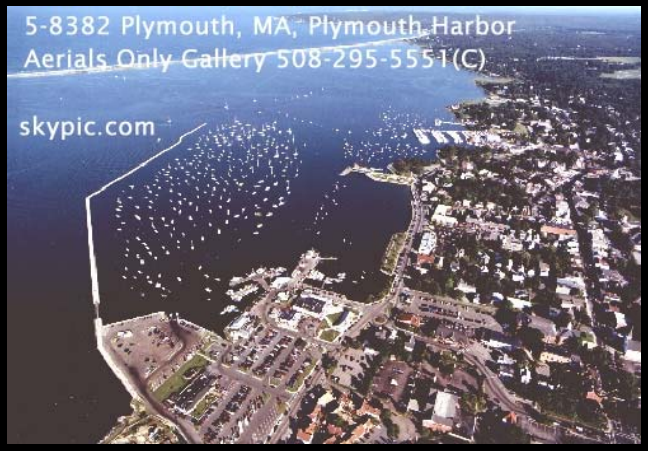
•Significance of Bottom-Fishing Disturbance. By: Kaiser, Michel J.. *Conservation Biology*, Dec98, Vol. 12 Issue 6, p1230-1235

Commonwealth of Massachusetts
DIVISION of MARINE FISHERIES

Ad-hoc consideration of individual projects.

Focus on short-term effects.

Evaluation of habitat on a small-scale



Cumulative, incremental effects pose serious threats to the environment.

Individual sources compound habitat degradation over larger-scale.

WINTHROP BEACH
MASSACHUSETS

Property protection

Mining gravel from the ocean bottom to use as beach fill

Dredging for Beach Fill as a Temporary Compensation for Erosion

IADC Dredging Images

Shabica Image

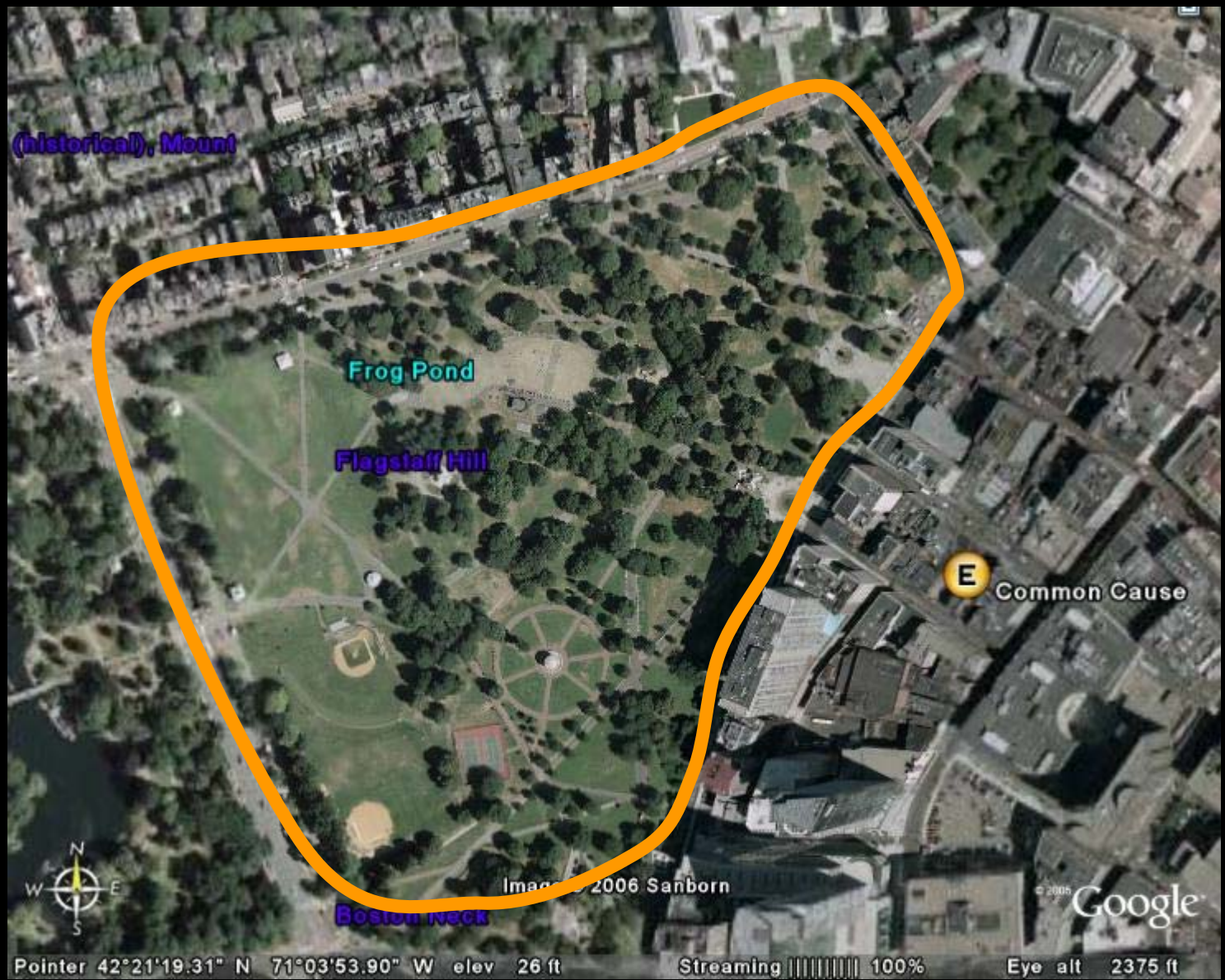
By its very nature, the act of dredging and relocating dredged material is an environmental impact (e.g. reclamation of wetlands, disposal of excavated material in biologically sensitive zones, disappearance of inter-tidal flats).

Evaluation of environmental impact should examine both the short- and long-term effects, as well as the sustainability of the altered environment.

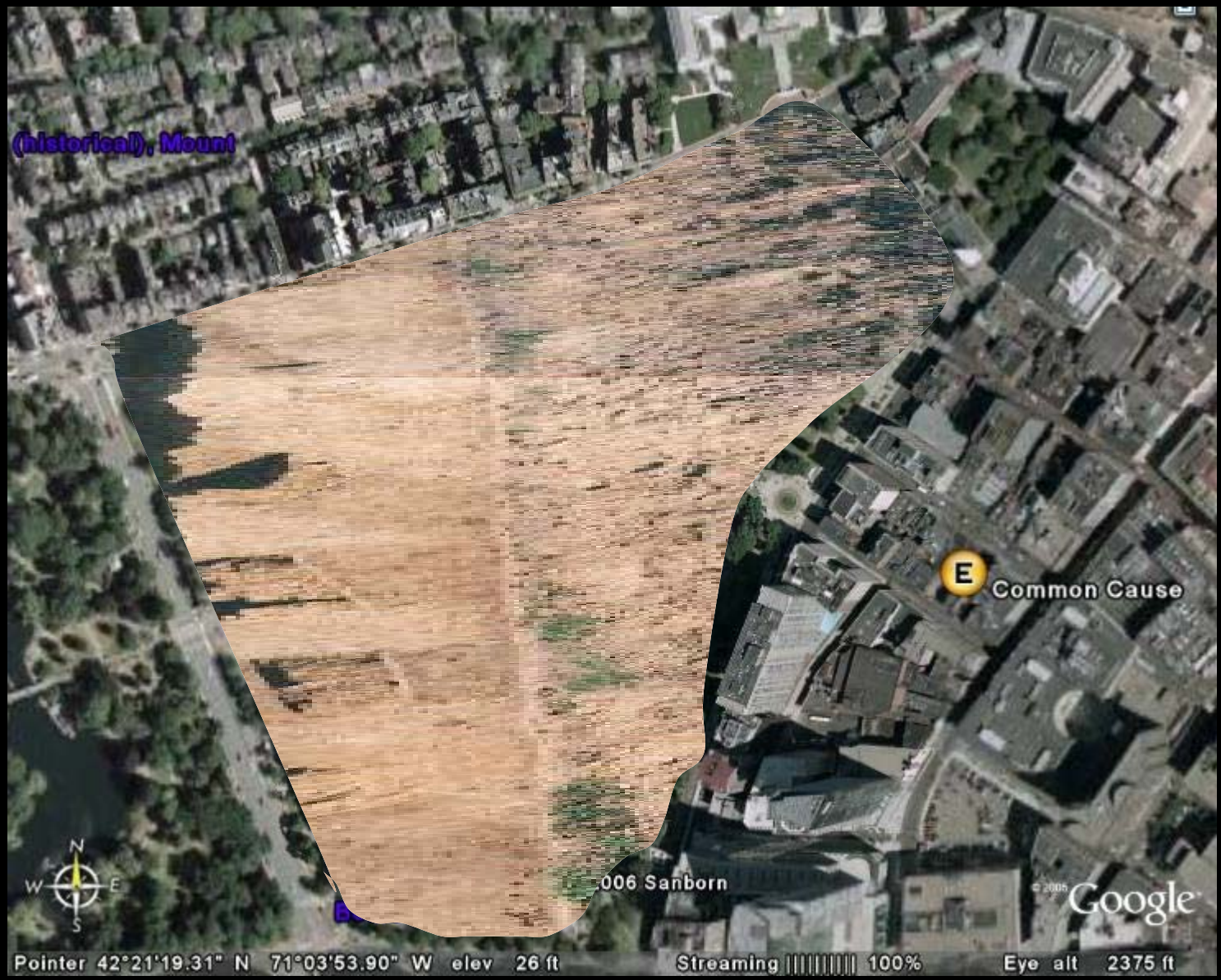
The environment is best served when a full analysis of the environmental implications is integrated in the design process of capital dredging works.

Commonwealth of Massachusetts
DIVISION of MARINE FISHERIES

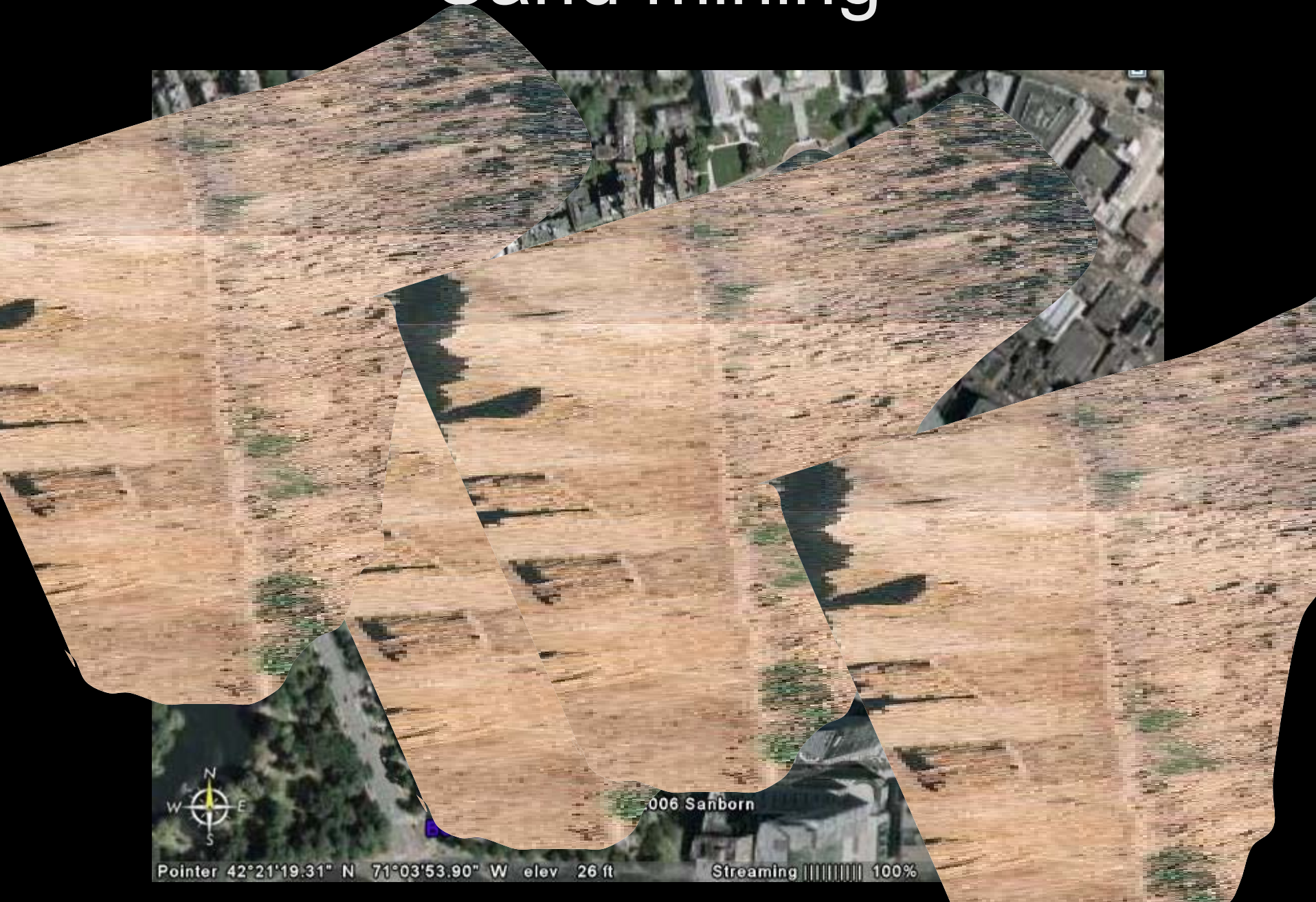
Boston Common
approximately 100 acres



Sand mining


(historical), Mount
E
Common Cause
006 Sanborn
© 2005 Google
N
W
E
S
Pointer 42°21'19.31" N 71°03'53.90" W elev 26 ft
Streaming 100%
Eye alt 2375 ft

Sand mining


006 Sanborn
Pointer 42°21'19.31" N 71°03'53.90" W elev 26 ft
Streaming 100%

Proposed excavation sites

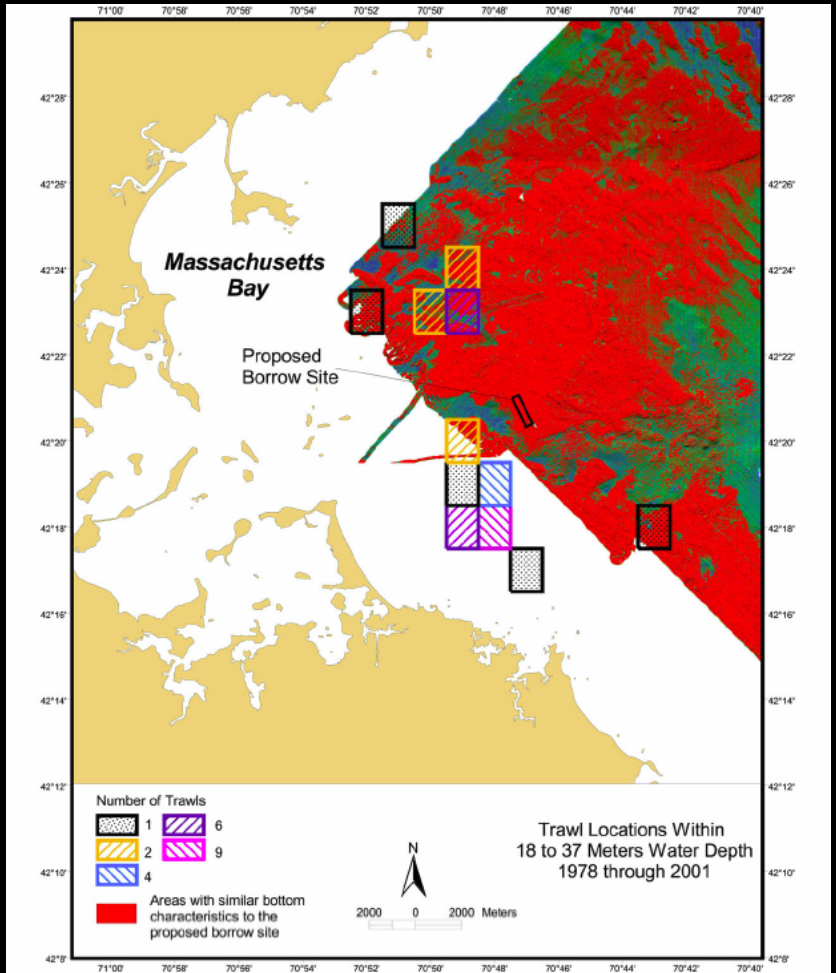
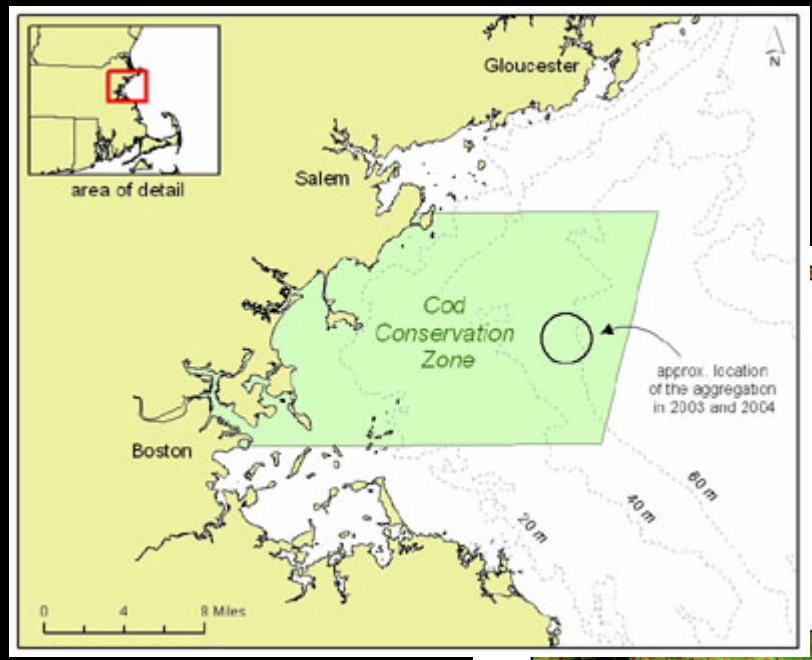
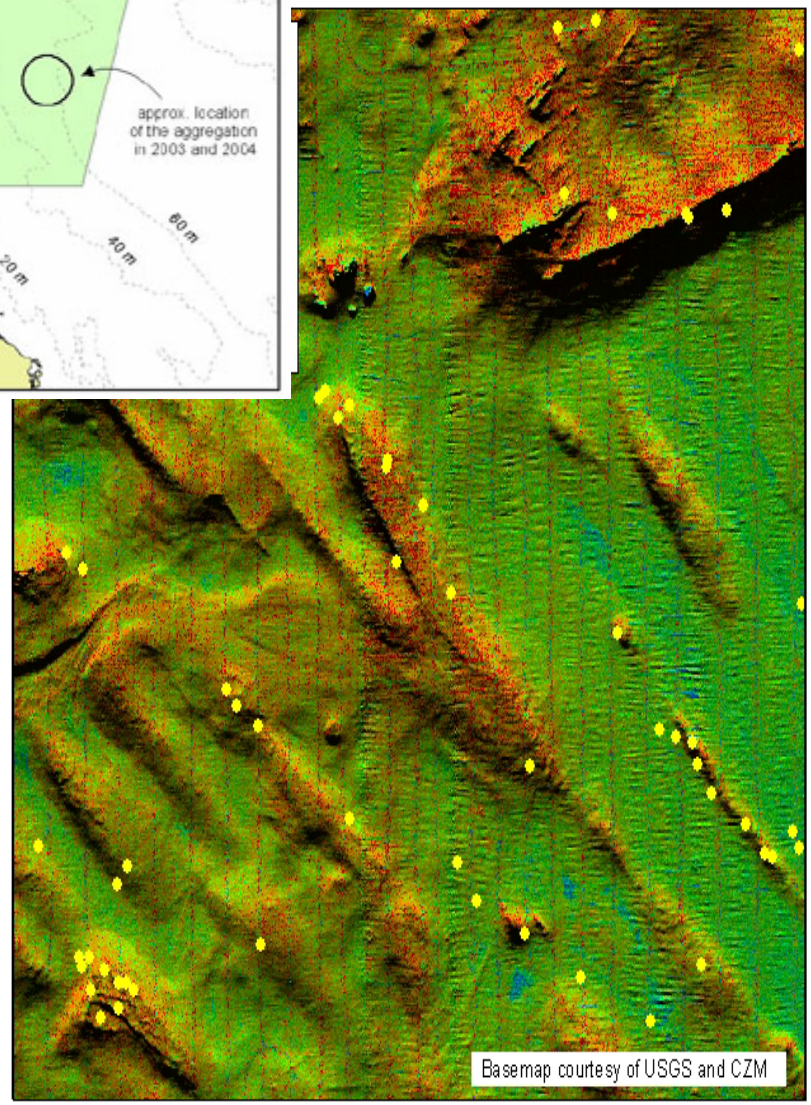


Figure 3. Distribution of Massachusetts Division of Marine Fisheries bottom trawl tows in a 17.6 nm^2 block of Massachusetts Bay; waters 18 to 37 meters (61 to 120 feet) deep.



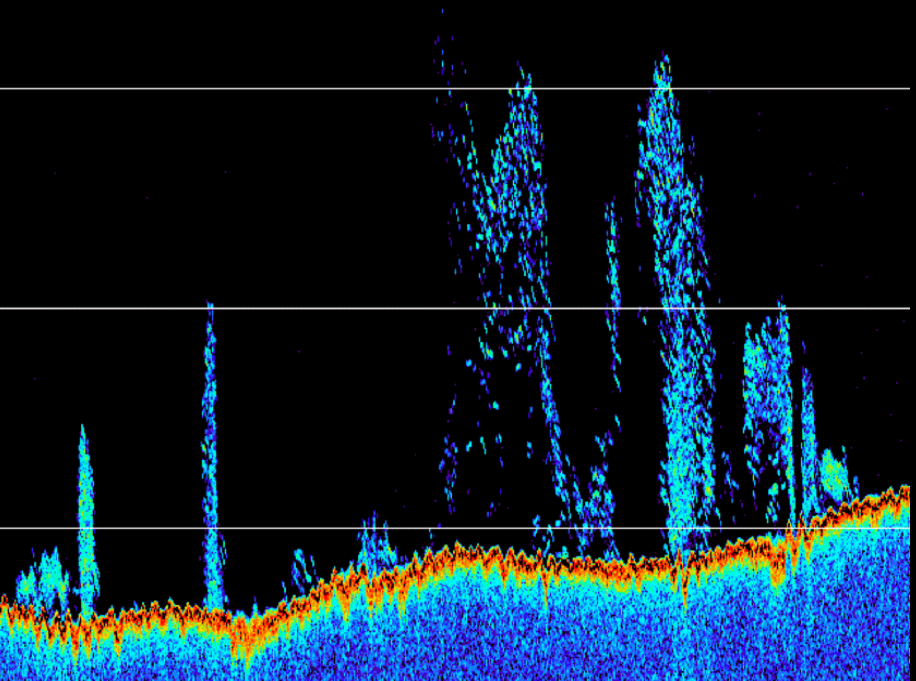


High relief habitat critical to conservation and management of living marine resources

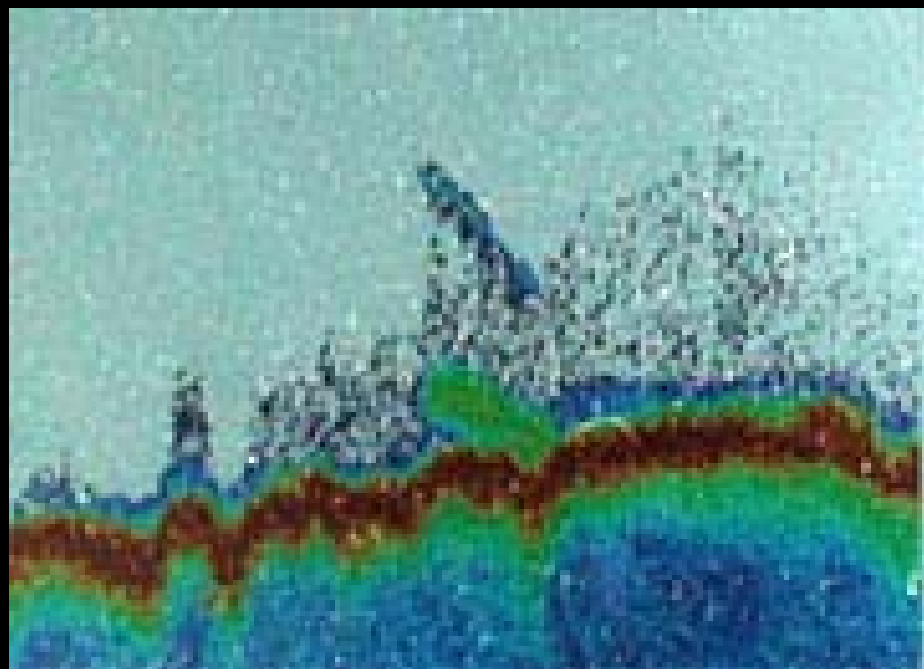
Commonwealth of Massachusetts
DIVISION OF MARINE FISHERIES

Atlantic cod spawning columns

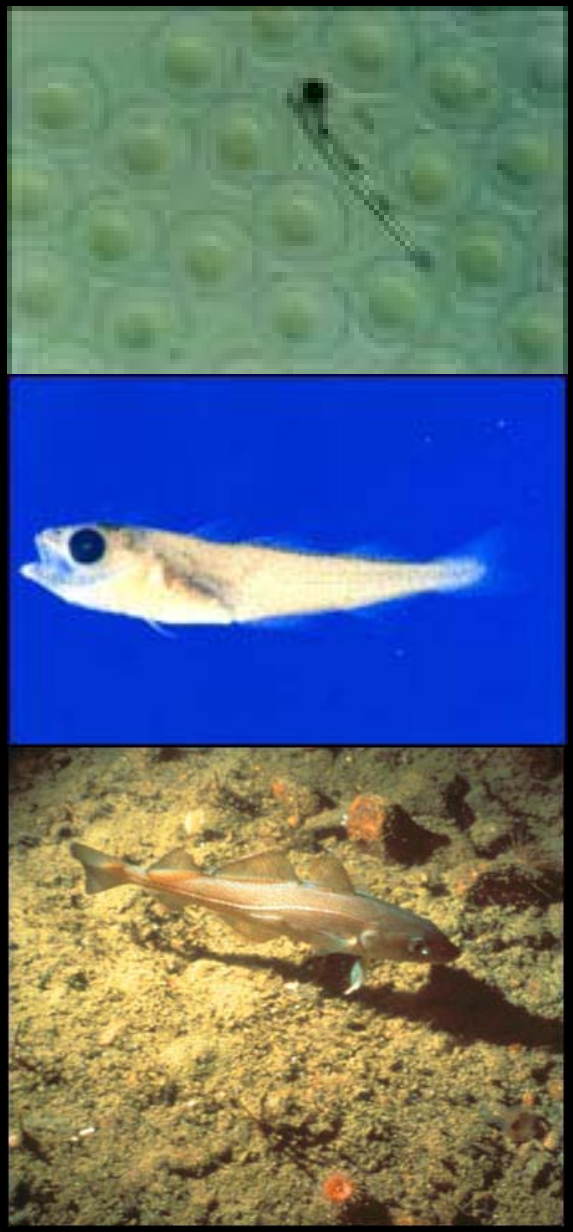
Smith Sound, Newfoundland

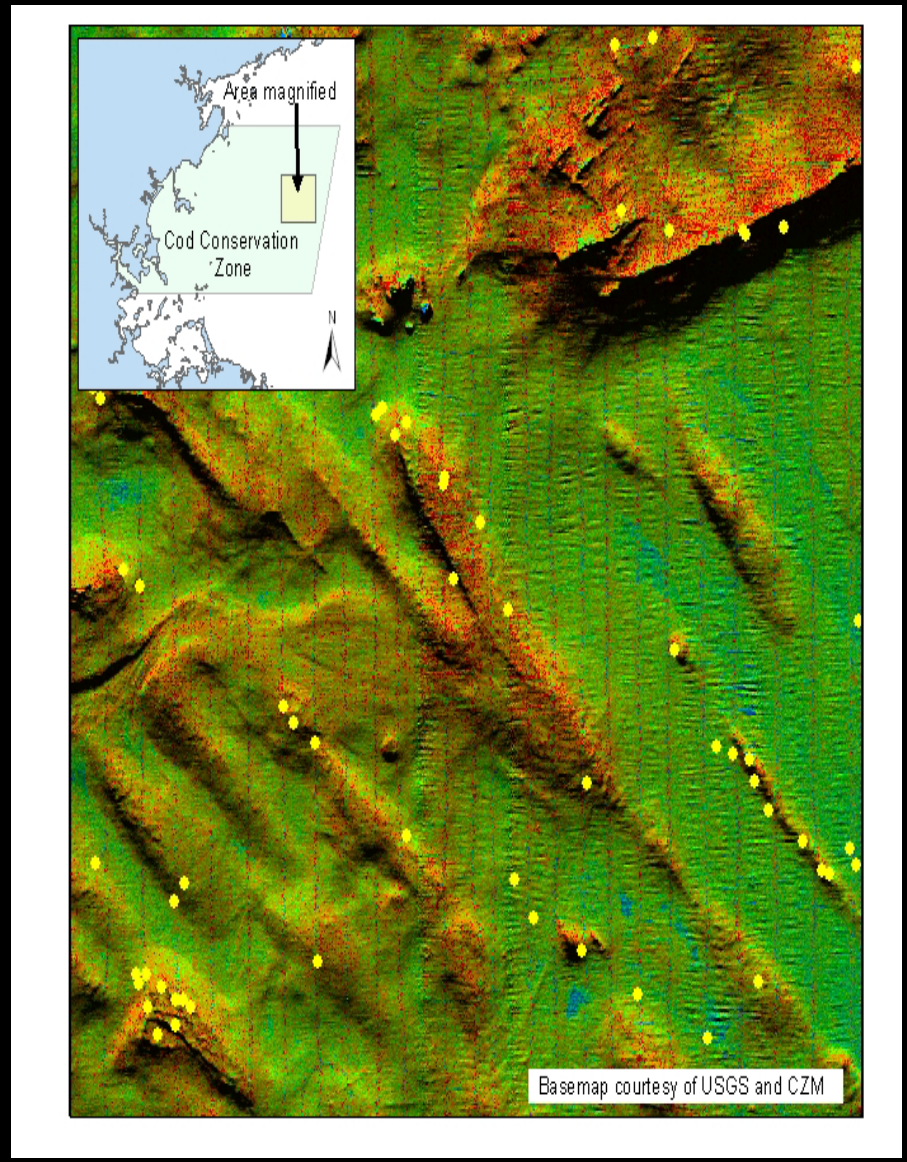


Massachusetts Bay, 2006



ATLANTIC COD





December 29, 2005

TO ALL INTERESTED IN STATE WATERS MANAGEMENT
OF GULF OF MAINE COD:

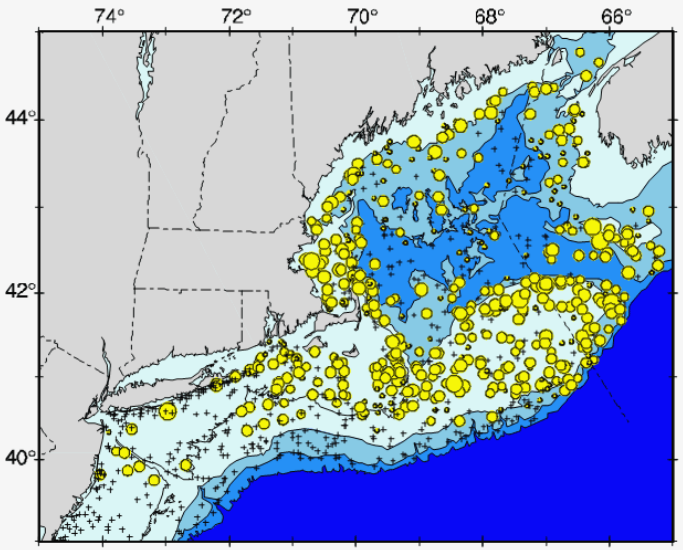
The Massachusetts Division of Marine Fisheries *(MarineFisherie*s) has provided greater protection for what it considers the last vestige of the Gulf of Maine cod stock.

MarineFisheries created and closed a *Cod Conservation Zone* within state waters of Massachusetts Bay from December 1, 2005 to January 15, 2006 to all fisheries capable of catching cod.

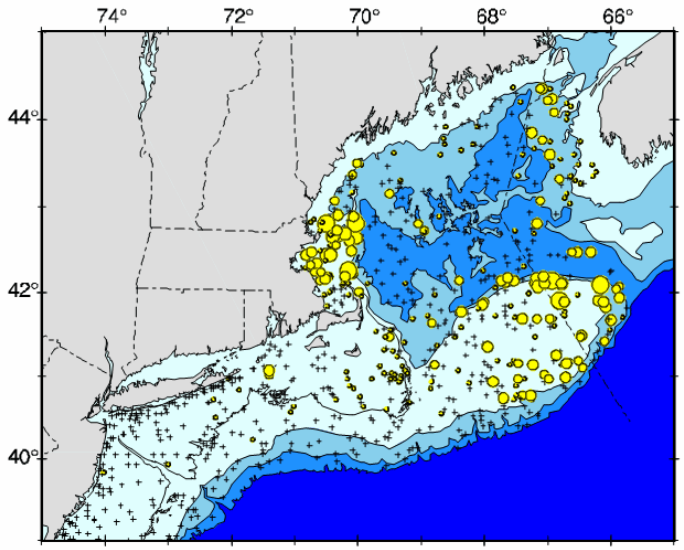
Based on agency ongoing work and growing knowledge of cod distribution, abundance, and spawning condition in this area, this cod fishing closure will be extended until February 28, 2006.

Paul J. Diodati
Director

NMFS Spring trawl surveys



Spring 1979-1981



Spring 2003-2005

NEFSC Images

Recommendations to the Coastal Hazards Commission

- Commitment to mapping and habitat characterization
- Enforce existing regulations against construction in flood zones
- Review and update the Wetlands Protection Act
- Require project applicants to undertake extensive biological and economic studies to assess the value of lost or altered habtat

Photo by Vin Malkoski - DMF

Massachusetts
Division of Marine Fisheries
Benthic Habitat Program